

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



01 OCT 2004

(43) International Publication Date
23 October 2003 (23.10.2003)

PCT

(10) International Publication Number
WO 03/087247 A1

(51) International Patent Classification⁷: C09D 183/04, C08J 7/04, H01L 51/20, H05B 33/14

(74) Agents: COCKERTON, Bruce, Roger et al.; Carpmaels & Ransford, 43 Bloomsbury Square, London WC1A 2RA (GB).

(21) International Application Number: PCT/GB03/01170

(81) Designated States (national): AE, AG, AL, AM, AT, AU,

(22) International Filing Date: 19 March 2003 (19.03.2003)

AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,

(25) Filing Language: English

CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,

(26) Publication Language: English

GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,

(30) Priority Data:
0208506.6 12 April 2002 (12.04.2002) GB

LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,

MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD,

SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US,

UZ, VC, VN, YU, ZA, ZM, ZW.

(71) Applicant (for all designated States except US): DUPONT TEIJIN FILMS U.S. LIMITED PARTNERSHIP [US/US]; Building 27, Barley Mill Plaza, Routes 141 & 48, Wilmington, DE 19805 (US).

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(72) Inventors; and

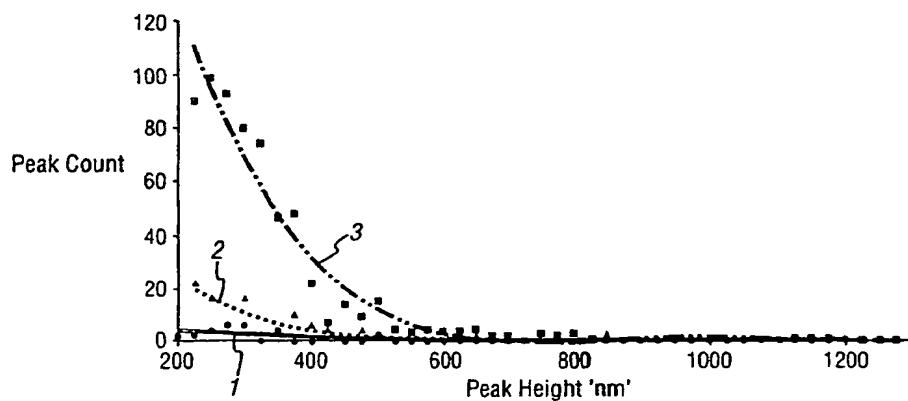
Published:

(75) Inventors/Applicants (for US only): ROBINSON, Julian, Neal [GB/GB]; 1 Low Easby Cottages, Easby, North Yorkshire TS9 6JH (GB). EVESON, Robert, William [GB/GB]; 11 Wardell Close, Yarm, Cleveland TS15 9UZ (GB). RAKOS, Karl [GB/GB]; 11 Meadowdale, Chilton, Durham DL17 0RW (GB).

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: COATED POLYMERIC SUBSTRATES HAVING IMPROVED SURFACE SMOOTHNESS SUITABLE FOR USE IN FLEXIBLE ELECTRONIC AND OPTO-ELECTRONIC DEVICES



WO 03/087247 A1

(57) Abstract: The use of a coating composition comprising: (a) from about 5 to about 50 weight percent solids, the solids comprising from about 10 to about 70 weight percent silica and from about 90 to about 30 weight percent of a partially polymerized organic silanol of the general formula $RSi(OH)_3$, wherein R is selected from methyl and up to about 40% of a group selected from the group consisting of vinyl, phenyl, gamma-glycidoxypropyl, and gamma-methacryloxypropyl, and (b) from about 95 to about 50 weight percent solvent, the solvent comprising from about 10 to about 90 weight percent water and from about 90 to about 10 weight percent lower aliphatic alcohol, wherein the coating composition has a pH of from about 3.0 to about 8.0, for the purpose of improving the surface smoothness of a polymeric substrate, particularly a heat-stabilised, heat-set, oriented polyester substrate, and use of said coated substrate in the manufacture of an electronic or opto-electronic device containing a conjugated conductive polymer.